REMARKS

Regarding the provisional non-statutory double-patenting rejection, Applicant respectfully requests that the rejection be held in abeyance at this time pending the patenting of conflicting claims in United States Application for Patent Serial No. 10/028,805. At that point in time, Applicant will either traverse the rejection or file a terminal disclaimer.

With respect to the Drawings, the Examiner has requested that Applicant label Figures 1-3 and 6 with a "PRIOR ART" legend. Applicant agrees with respect to Figures 3 and 6, but traverses with respect to Figures 1 and 2. In the Specification Applicant has indicated that Figures 1 and 2 illustrate receivers configured in the Mux/Sync Control/Idle Cell Removal machine 196 to perform operations of Figure 4 steps 90 and 92 which relate to the invention claimed by Applicant. As such, Figures 1 and 2 do not illustrate a prior art receiver.

Claims 3 and 15 have been canceled. Claims 1-2, 4-14 and 16-34 are now pending in the application.

Claims 1-8, 10-20 and 22-24 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admitted Prior Art in view of Sonalkar.

Claim 1 has been amended to recite that there exists a required multi-subcarrier bandwidth that is smaller than a total available multi-subcarrier bandwidth. The multi-subcarrier limitation emphasizes that the claimed operations occur with respect to multiple DSL subcarriers as opposed to a single subcarrier. Thus, the subsequently claimed operations for calculating, for a plurality of subcarrier location positions and choosing a location position for the required multi-subcarrier bandwidth are made in the context of muliple subcarrier analysis. Claim 1 has further been amended to recite "generating a multi-subcarrier DSL signal for the new DSL loop

communication having the required multi-subcarrier bandwidth and positioned at the chosen location." The claim, as amended, is believed to distinguish over the admitted prior art and the Sonalkar reference.

The Examiner has already conceded that the admitted prior art fails to teach the claimed optimization of DSL communications performance (see, Office Action page 9). Applicant respectfully submits that the Sonalkar reference neither teaches nor suggest the claimed process. In Sonalkar, a teaching is provided for individually allocating bits to individual frequency bins that requires the least possible power for a maximum data rate (page 13, line 19-22). This minimizes total power consumption (page 14, lines 3-4). A modification of this process is then used to minimize NEXT (page 14, lines 5-7). This effectively forces the allocation of bits to lower frequency bins (page 14, lines 13-14) because NEXT effects are higher at higher frequencies than lower frequencies (page 11, lines 14-20).

The Sonalkar teaching in effect has pre-selected a needed bandwidth and a location within that needed bandwidth for an existing DSL communication, and then uses the algorithm to plug bits of that DSL communication into individual frequency channels of the needed bandwidth at the chosen location. The operation of Sonalkar is accordingly performed with respect to individual channels (not multi-channels) and further is performed AFTER determining the placement location within the overall available bandwidth of the needed bandwidth for the DSL communciation. This is contrasted with the claimed invention which instead operates responsive to "a new DSL loop communication" which has a "required bit rate corresponding to a required <u>multi-subcarrier</u> bandwidth that is smaller than a total available <u>multi-subcarrier</u> bandwidth." The claimed invention does not presume a location within the total available

bandwidth, as in Sonalkar, but instead calculates "for a plurality of subcarrier location positions of the required multi-subcarrier bandwidth for the new DSL loop communication within the total available multi-subcarrier bandwidth, a crosstalk noise effect of the new DSL loop communication with respect to the at least one active DSL loop." In effect, the claimed invention is testing crosstalk contribution of the new DSL loop communication at a plurality of possible location positions. A position has not yet been chosen and DSL communications have not yet been generated. Then, "a location position for the required multi-subcarrier bandwidth [is chosen] to carry the new DSL loop communication within the total available multi-subcarrier bandwidth where the calculated crosstalk noise effect with respect to the at least one active DSL loop is minimized." The new DSL loop communication multi-subcarrier DSL signal is then generated at the chosen location position within the total available multi-subcarrier bandwidth.

There is no teaching or suggestion in Sonalkar for the crosstalk minimization process claimed which occurs with respect to a new DSL loop communication before the multi-subcarrier DSL signal is generated. Rather, Sonalkar performs its crosstalk minimization process with respect to an existing DSL communication by testing the crosstalk effect of placing a given bit of that DSL communication in one of a number of possible frequency bins. There is no indication in Sonalkar for his process being useful or useable prior to the generation of the multi-subcarrier DSL signal of the new DSL loop communication. Nor is there any teaching or suggestion in Sonalkar for his process being operable with respect to multi-subcarrier bandwidth placement, as opposed to individual bit placement at a frequency within a bandwidth. In view of the foregoing, Applicant respectfully submits that the claimed invention is patentable over Sonalkar.

Applicant further points out that the claimed process and the process of Sonalkar are complementary in that the claimed process can be used with a new DSL loop communication to determine its best minimal crosstalk bandwidth placement within the available spectrum, and the Sonalkar process can then be used after the new DSL communication is transitioned to an active DSL communication to most effectively place bits of that active (new) communication into frequency bins so as to minimize crosstalk.

Claim 13 is believed to be patentable over the cited art for at least the same reasons as claim 1.

Turning now to claim 25, Applicant has amended to the claim to recite "<u>a DSL signal generator for generating an active DSL loop communication for that new DSL loop communication having the required bandwidth and positioned at the chosen location</u>." This amendment is presented to emphasize that the crosstalk noise estimation is being made with respect to a new DSL loop communication that has not transitioned to an active DSL loop communication. The active DSL loop communication for that new DSL loop communication is generated after the noise estimation and minimization algorithms are executed to "calculate, at each one of a plurality of possible required bandwidth positions within the total available bandwidth, a crosstalk noise effect of the new DSL loop communication" and "choose one of the possible positions as a location of the required bandwidth within the total available bandwidth." As discussed above, Sonalkar teaches performing the crosstalk minimization process with respect to an existing DSL communication by testing the crosstalk effect of placing a given bit of that active DSL communication in one of a number of possible frequency bins. There is no

indication in Sonalkar for the process being useful or useable prior to the generation of the active multi-subcarrier DSL signal of the new DSL loop communication.

In view of the foregoing, Applicant submits that claim 25 is patentable over the cited prior art.

Respectfully submitted,
JENKENS & GILCHRIST,
A Professional Corporation

By: ______________________
Andre M. Szuwalski
Registration No. 35,701

1445 Ross Avenue, Suite 3200
Dallas, Texas 75202-2799
Tel: 214/855-4795
Fax: 214/855-4300

IN THE DRAWINGS

Please amend Drawing Figures 3 and 6 include a "PRIOR ART" legend.

Formal substitute Drawings including the amendments to Figures 3 and 6 are concurrently submitted herewith.